

FIG.1 FIG.13 FIG.21 FIG.24 FIG.26 FIG.27

100 MOBILE STATION APPARATUS

110 TRANSMITTING SECTION

111 PILOT SELECTING SECTION 111

5 112 MODULATION SECTION

TRANSMISSION DATA

113 FREQUENCY SELECTING SECTION

114 IFFT SECTION

115 GI ADDING SECTION

10 116 RF SECTION

120 RECEIVING SECTION

122 RF SECTION

123 GI REMOVING SECTION

124 FFT SECTION

15 125 SEPARATING/SELECTING SECTION

126 PROPAGATION PATH ESTIMATING SECTION

127 PROPAGATION PATH COMPENSATING SECTION

128 DEMODULATION SECTION

129 DECODING SECTION

20 130 ERROR DETECTING SECTION

RECEPTION DATA

131 PROPAGATION PATH DETERMINING SECTION

FIG.2A FIG.2B

25 RECEPTION LEVEL

SUBBAND

FREQUENCY

ALL BANDS

SELECT THIS BAND

FIG.3A FIG.3B

5 SUBCARRIER NUMBER

FREQUENCY

SUBBAND #1

SUBBAND #2

10 FIG.4

SUBCARRIER NUMBER

SUBBAND

FREQUENCY

15 FIG.5

113 FREQUENCY SELECTING SECTION

114 IFFT SECTION

FROM MODULATION SECTION 112

FROM PROPAGATION PATH DETERMINING SECTION 131

20

FIG.6

MOBILE STATION APPARATUS 100

BASE STATION APPARATUS 150

DATA

25 ST1020 PROPAGATION PATH DETERMINATION

ST1030 SUBBAND SELECTION

ST1050 FREQUENCY SCHEDULING (DETERMINATION OF SUBBAND)

ST1070 RECEPTION PROCESSING

FIG.7 FIG.25 FIG.28

150 BASE STATION APPARATUS

5 160 TRANSMITTING SECTION

161-1 161-2 BUFFER

DATA

162-1 162-2 CODING SECTION

163-1 163-2 MODULATION SECTION

10 164 FREQUENCY SELECTING SECTION

165 MULTIPLEXING SECTION

166 IFFT SECTION

167 GI ADDING SECTION

168 RF SECTION

15 170 RECEIVING SECTION

172 RF SECTION

173 GI REMOVING SECTION

174 FFT SECTION

175 USER SELECTING SECTION

20 176-1 176-2 DETERMINING SECTION

FIG.8

FREQUENCY

SUBCARRIER BLOCK

25 TIME

UPLINK

DOWNLINK

FIG. 9

174 FFT SECTION

175 USER SELECTING SECTION

176-1 176-2 DETERMINING SECTION

5 183-1 DETECTING SECTION

TO FREQUENCY SELECTING SECTION 164

FIG. 10

163-1 163-2 MODULATION SECTION

10 164 FREQUENCY SELECTING SECTION

FROM USER SELECTING SECTION 175

165 MULTIPLEXING SECTION

MODULATED PILOT SIGNAL

15 FIG. 11

SUBCARRIER NUMBER

SUBBAND

FREQUENCY

20 FIG. 12

SUBCARRIER NUMBER

FIG. 13

200 MOBILE STATION APPARATUS

25 210 TRANSMITTING SECTION

211 PILOT SELECTING SECTION

212 MODULATION SECTION

TRANSMISSION DATA

213 FREQUENCY SELECTING SECTION

220 RECEIVING SECTION

231 PROPAGATION PATH DETERMINING SECTION

5

FIG.14A FIG.14B

RECEPTION LEVEL

SUBBAND

ALL BAND

10 SELECT THIS BAND WITH A FIRST PRIORITY

SELECT THIS BAND WITH A SECOND PRIORITY

FIG.15

FIRST PRIORITY

15 SECOND PRIORITY

FIG.16

114 IFFT SECTION

213 FREQUENCY SELECTING SECTION

20 FROM MODULATION SECTION 212

FROM PROPAGATION PATH DETERMINING SECTION 231

FIG.17

174 FFT SECTION

25 175a USER SELECTING SECTION

176-1 176-2 DETERMINING SECTION

283-1 DETECTING SECTION

TO FREQUENCY SELECTING SECTION 164a

FIG.18

163-1 163-2 MODULATION SECTION

164a FREQUENCY SELECTING SECTION

5 165 MULTIPLEXING SECTION

MODULATED PILOT SIGNAL

255 ADJUSTING SECTION

FROM USER SELECTING SECTION 175a

10 FIG.19

START

ST2010 SB2 OF U1 COMPETES WITH OTHERS?

ST2020 SB2 IS ALREADY USED?

ST2030 ASSIGN SB1 TO U1 AND SB2 TO U2

15 ST2040 ASSIGN SB2 TO U1 AND SB1 TO U2

ST2050 ASSIGN SB1 TO U1 AND SB2 TO U2

END

FIG.20

20 SUBBAND NUMBER OF THE FIRST PRIORITY

SUBBAND NUMBER OF THE SECOND PRIORITY

SUBBAND NUMBER OF THE THIRD PRIORITY

PRIORITY INFORMATION OF USER #1

PRIORITY INFORMATION OF USER #2

25 PRIORITY INFORMATION OF USER #3

SELECTED SUBBAND NUMBER

UNAVAILABLE SUBBAND NUMBER DUE TO BEING SECECTED BY

ANOTHER USER

UNNECESSARY SUBBAND NUMBER SINCE THE SUBBAND WITH A HIGHER
PRIORITY HAS BEEN SELECTED

5 FIG.21

300 MOBILE STATION APPARATUS
301 MOVE DETERMINING SECTION
302 DATA TYPE DETERMINING SECTION
320 RECEIVING SECTION

10

FIG.22

START

ST3010 MEASURE A MOVING STATE OF A MOBILE STATION
APPARATUS

15 ST3020 IN A STATIC STATE ?

ST3030 NORMAL OPERATION

ST3040 1 STOP PROPAGATION PATH DETERMINING SECTION

2 FREQUENCY SELECTING SECTION HOLDS THE SWITCH
STATE

20 ST3050 DETERMINES QoS

ST3060 SPEECH DATA AND THE LIKE ?

ST3070 STOP TRANSMISSION OF ACK/NACK

FIG.23

25 FREQUENCY

SUBBAND

USER

SUBCARRIER

TIME

UNIT OF FREQUENCY SCHEDULING UPDATE

FIG.24

- 5 400 MOBILE STATION APPARATUS
 - 401 CONTROL SECTION
 - 410 TRANSMITTING SECTION
 - 411 OFDMA TRANSMITTING SECTION
 - 413 RF SECTION
- 10 420 RECEIVING SECTION
 - 421 RF SECTION
 - 423 OFDMA RECEIVING SECTION

FIG.25

- 15 450 BASE STATION APPARATUS
 - 451 CONTROL SECTION
 - 460 TRANSMITTING SECTION
 - 461 OFDMA TRANSMITTING SECTION
 - 463 RF SECTION
- 20 470 RECEIVING SECTION
 - 471 RF SECTION
 - 473 OFDMA RECEIVING SECTION

FIG.26

- 25 411 OFDMA TRANSMITTING SECTION
- 414 CODING SECTION
- TRANSMISSION DATA

FIG.27

423 OFDMA RECEIVING SECTION
RECEPTION DATA

5

FIG.28

461 OFDMA TRANSMITTING SECTION
TRANSMISSION DATA

10 FIG.29

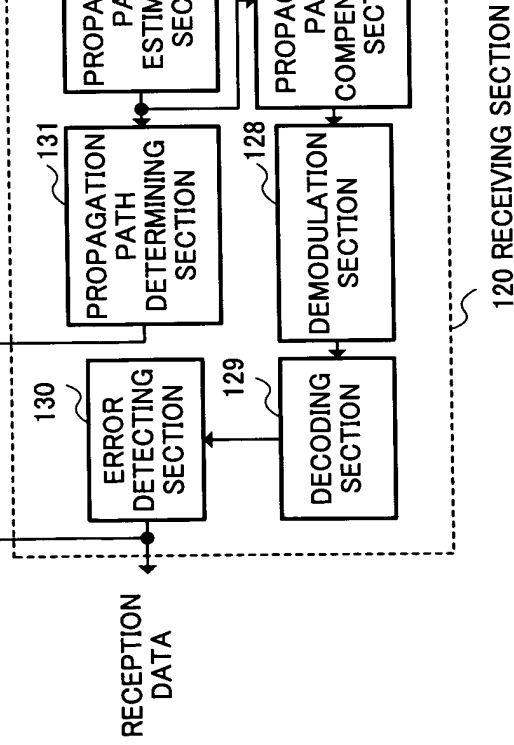
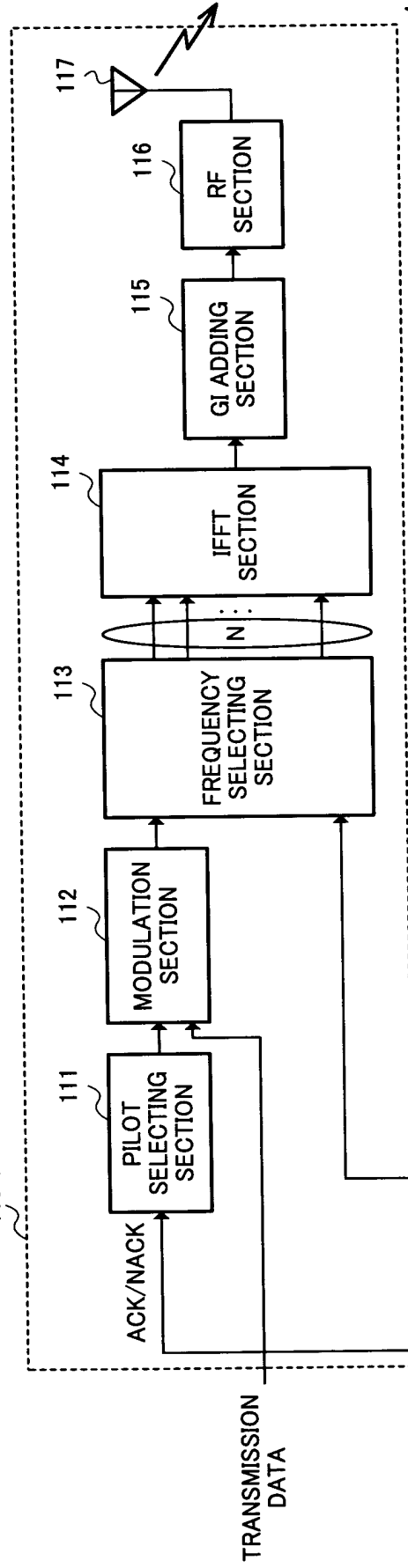
473 OFDMA RECEIVING SECTION
RECEPTION DATA
RECEPTION DATA

473-1 473-2 DECODING SECTION

15 474-1 474-2 DEMODULATION SECTION

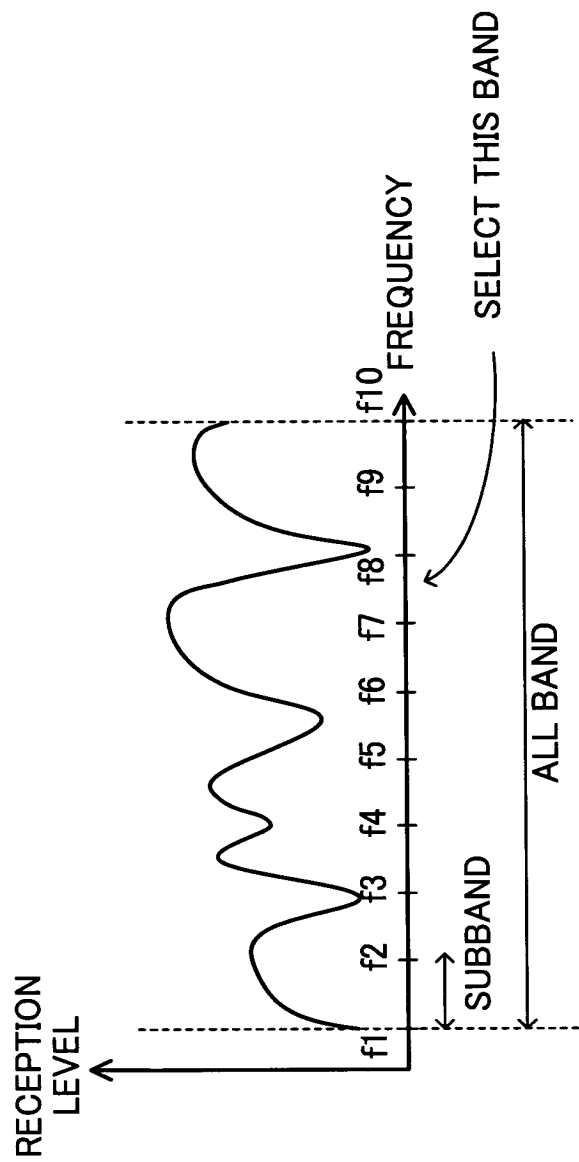
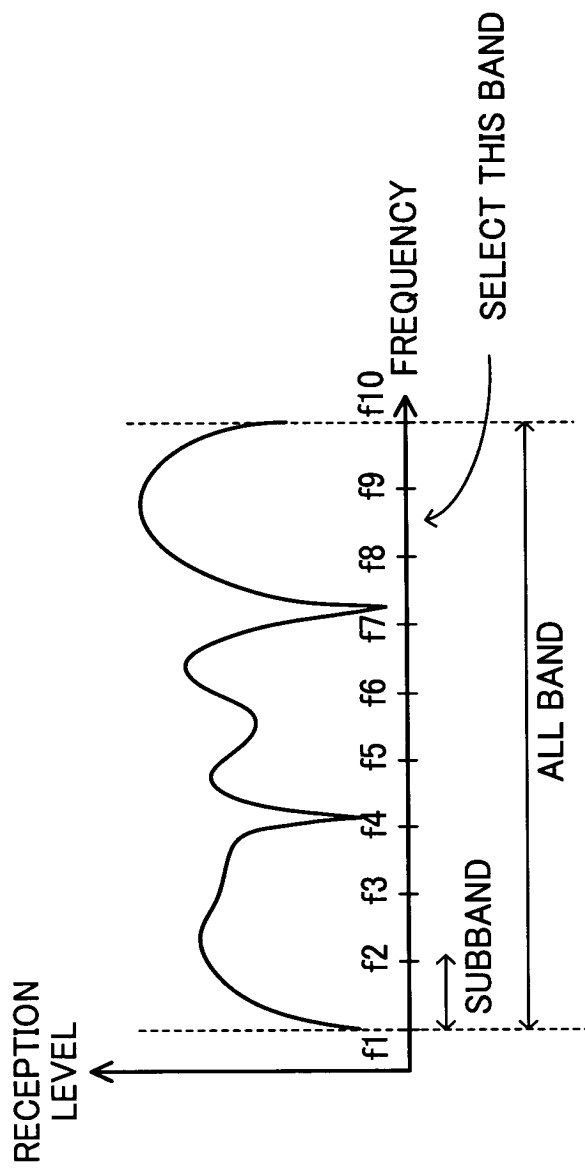
100 MOBILE STATION APPARATUS

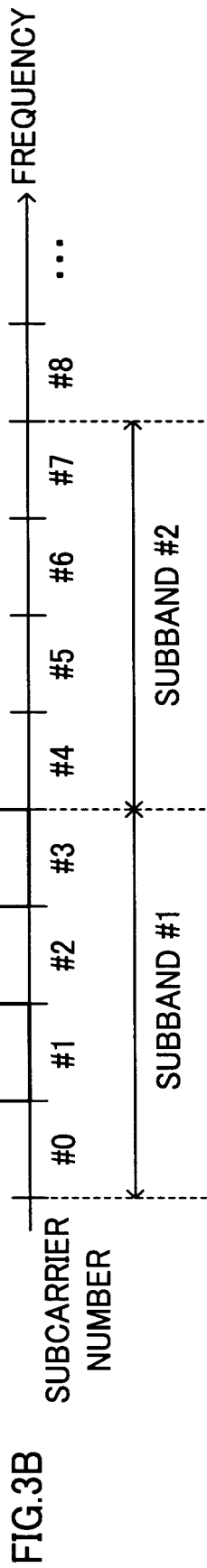
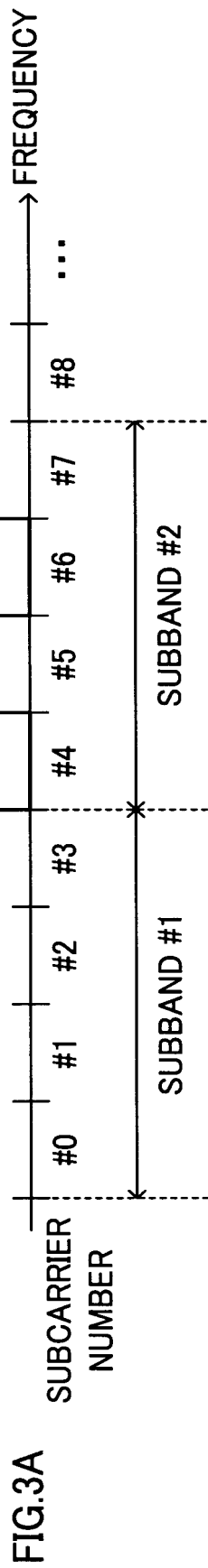
110 TRANSMITTING SECTION



120 RECEIVING SECTION

FIG.1





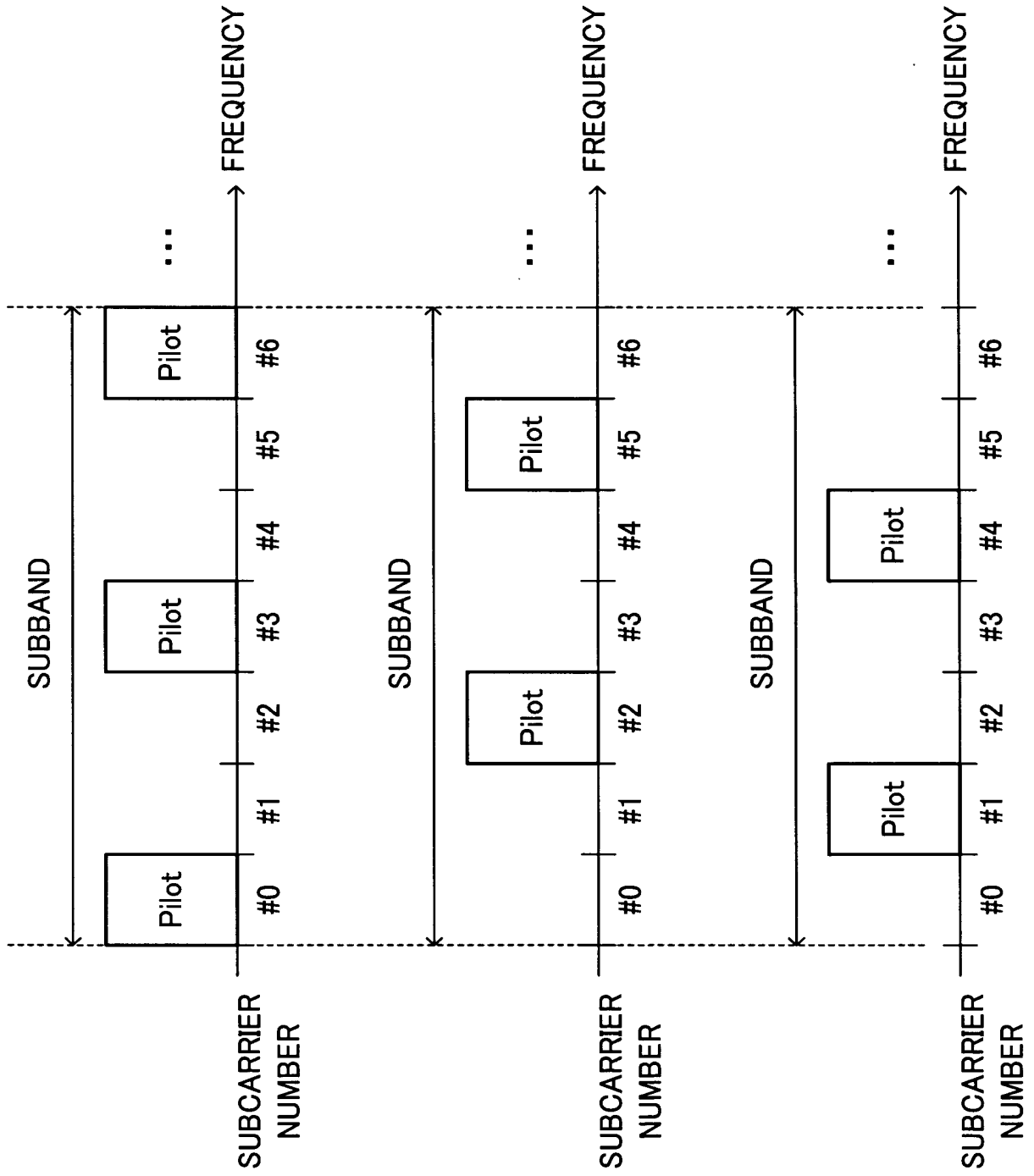


FIG.4

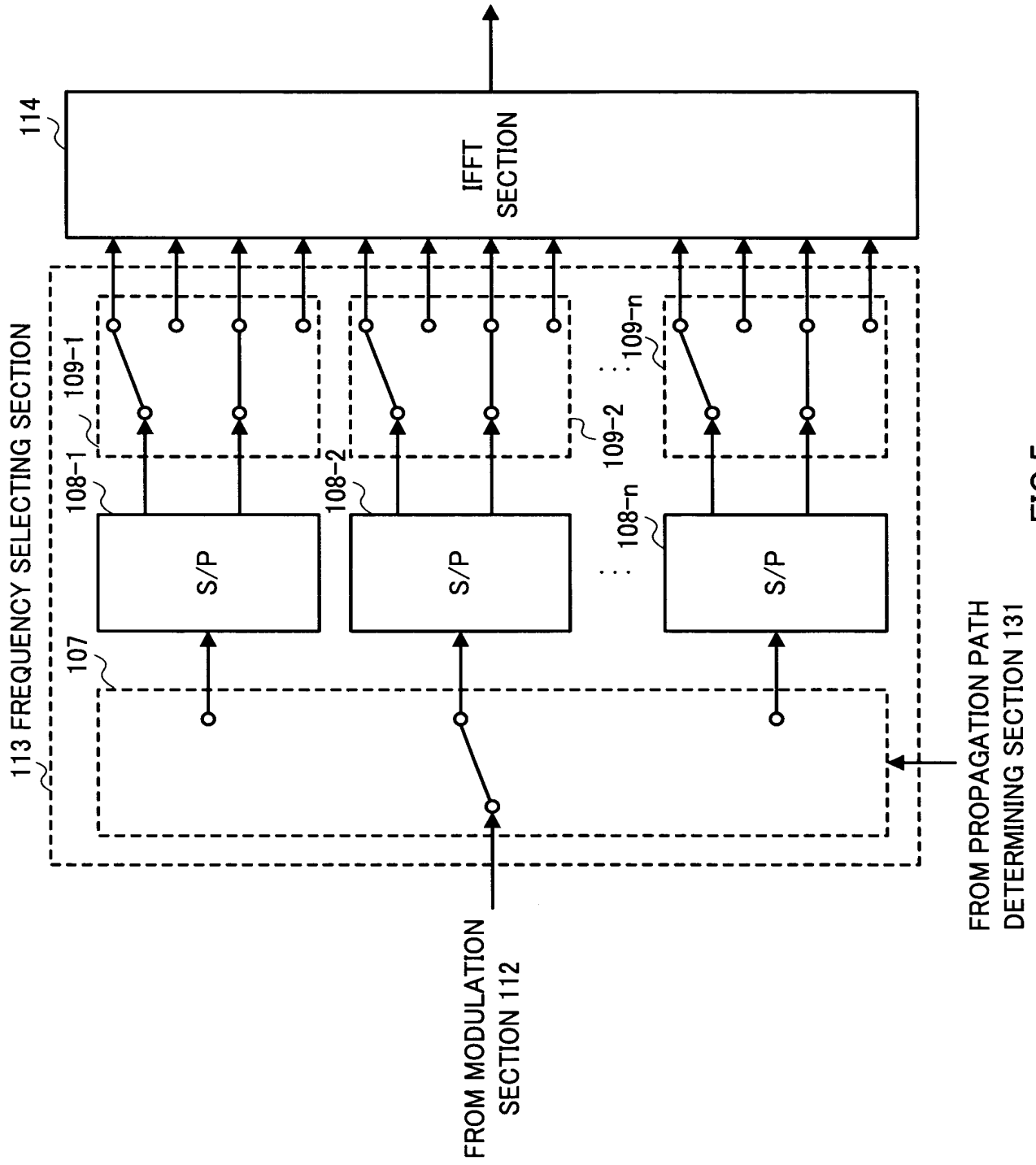


FIG.5

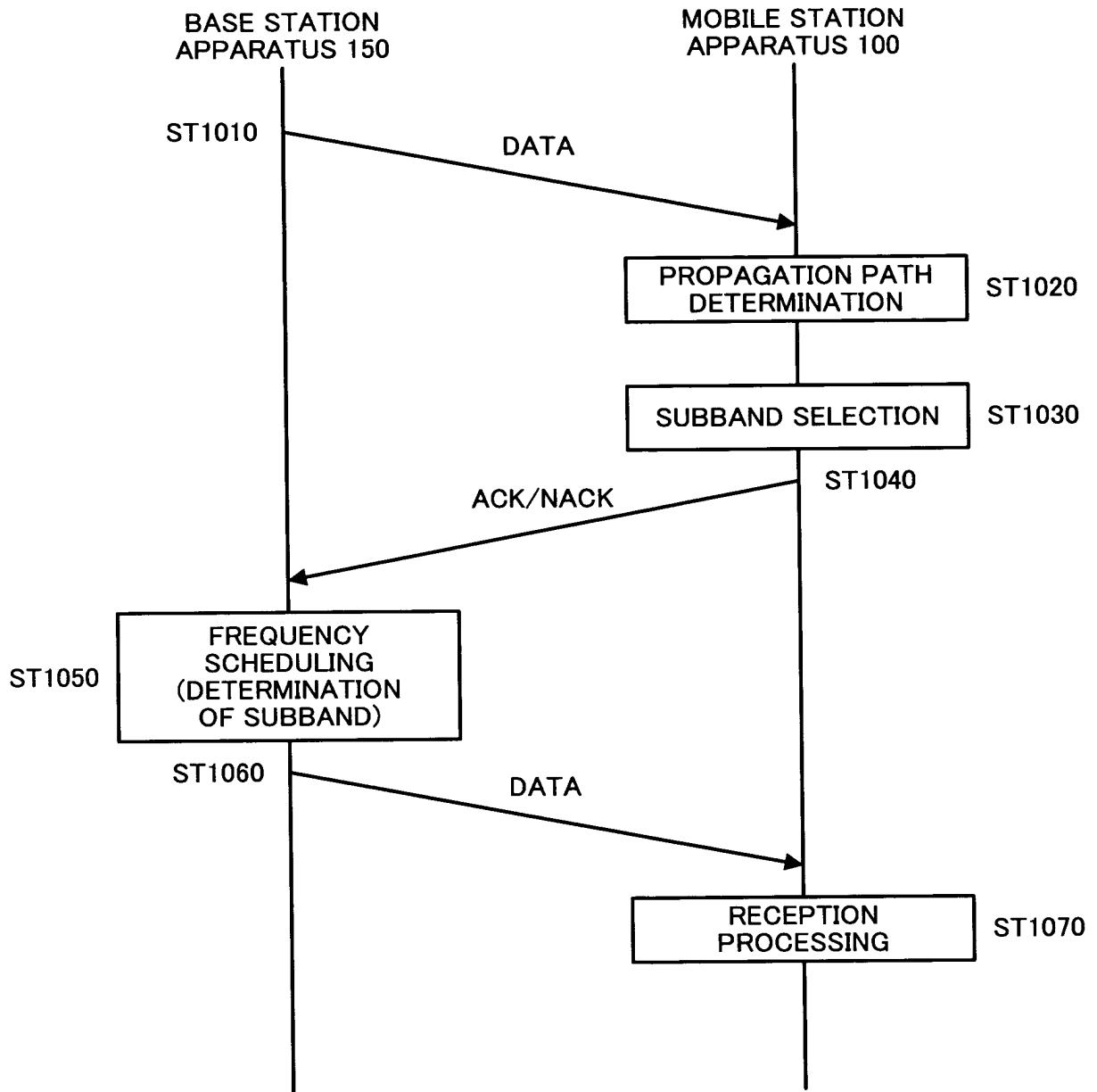


FIG.6

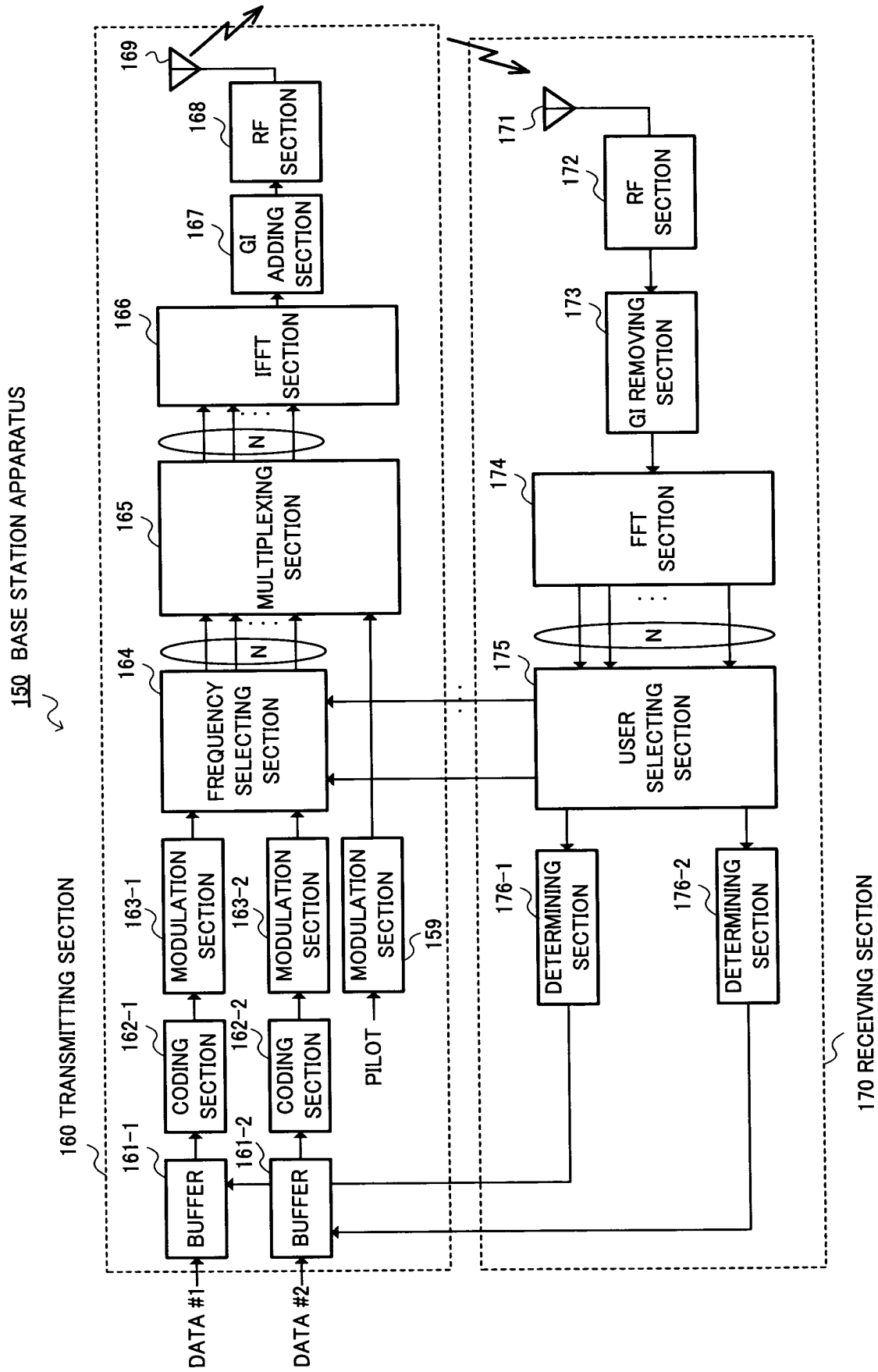


FIG.7

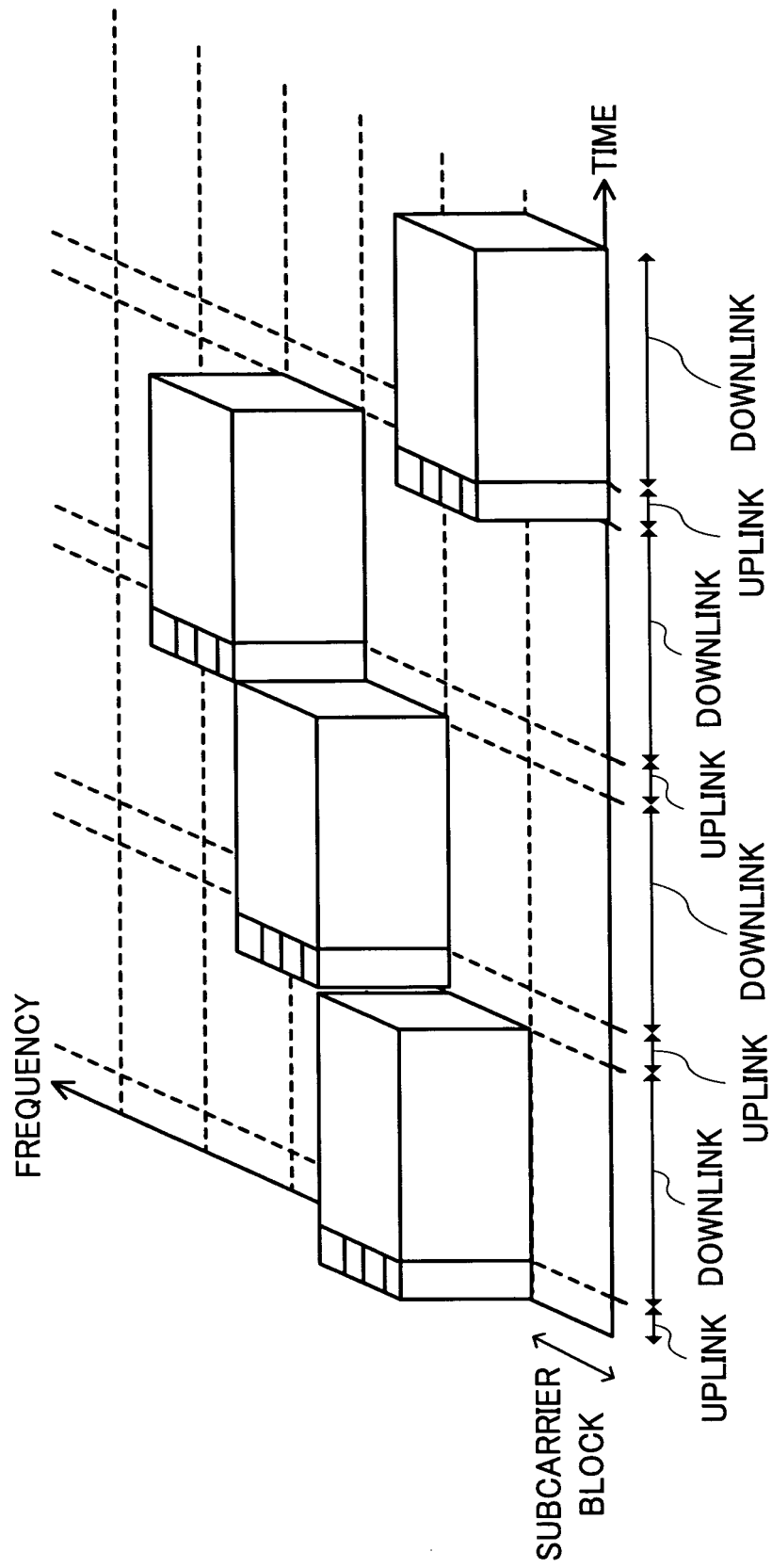


FIG.8

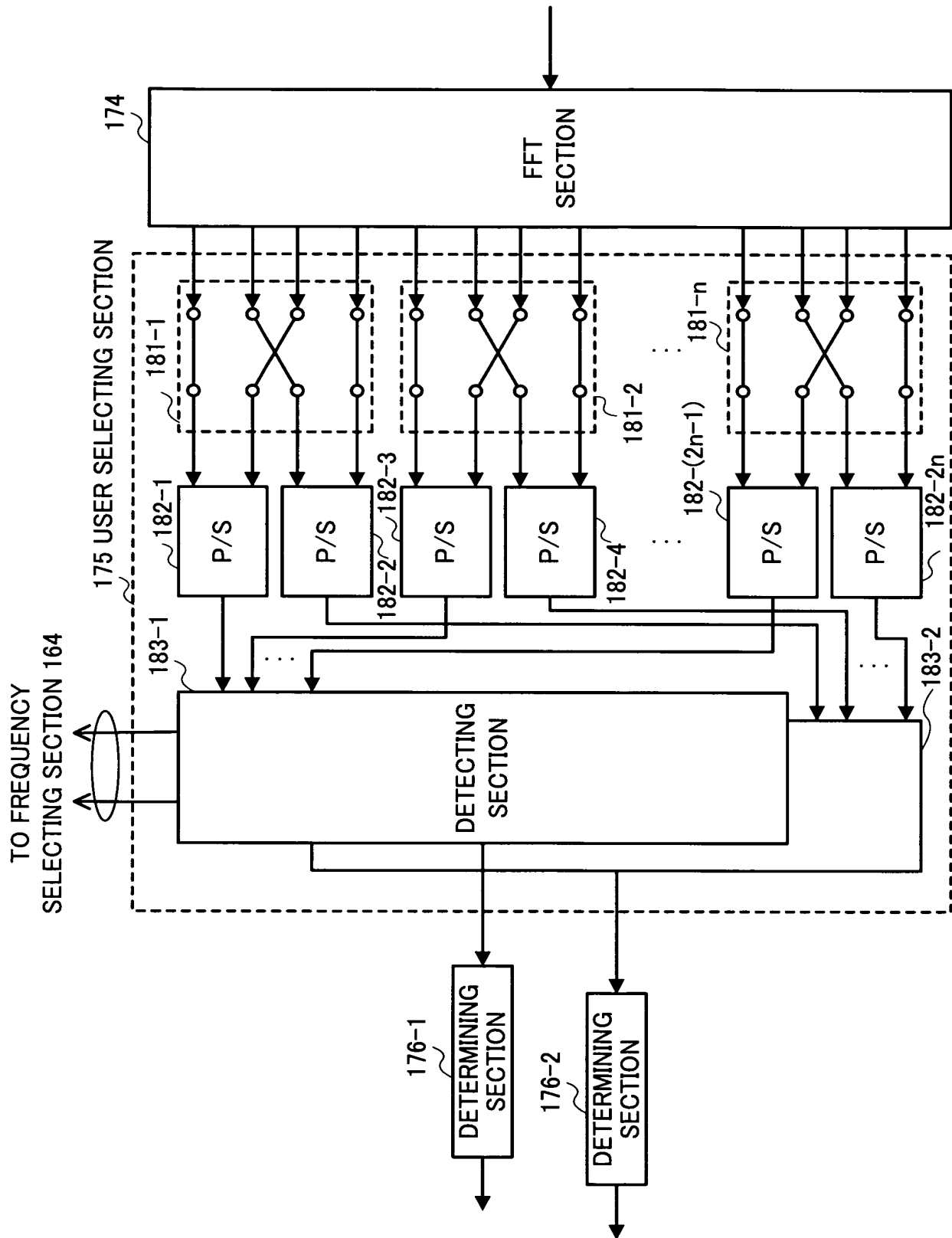


FIG.9

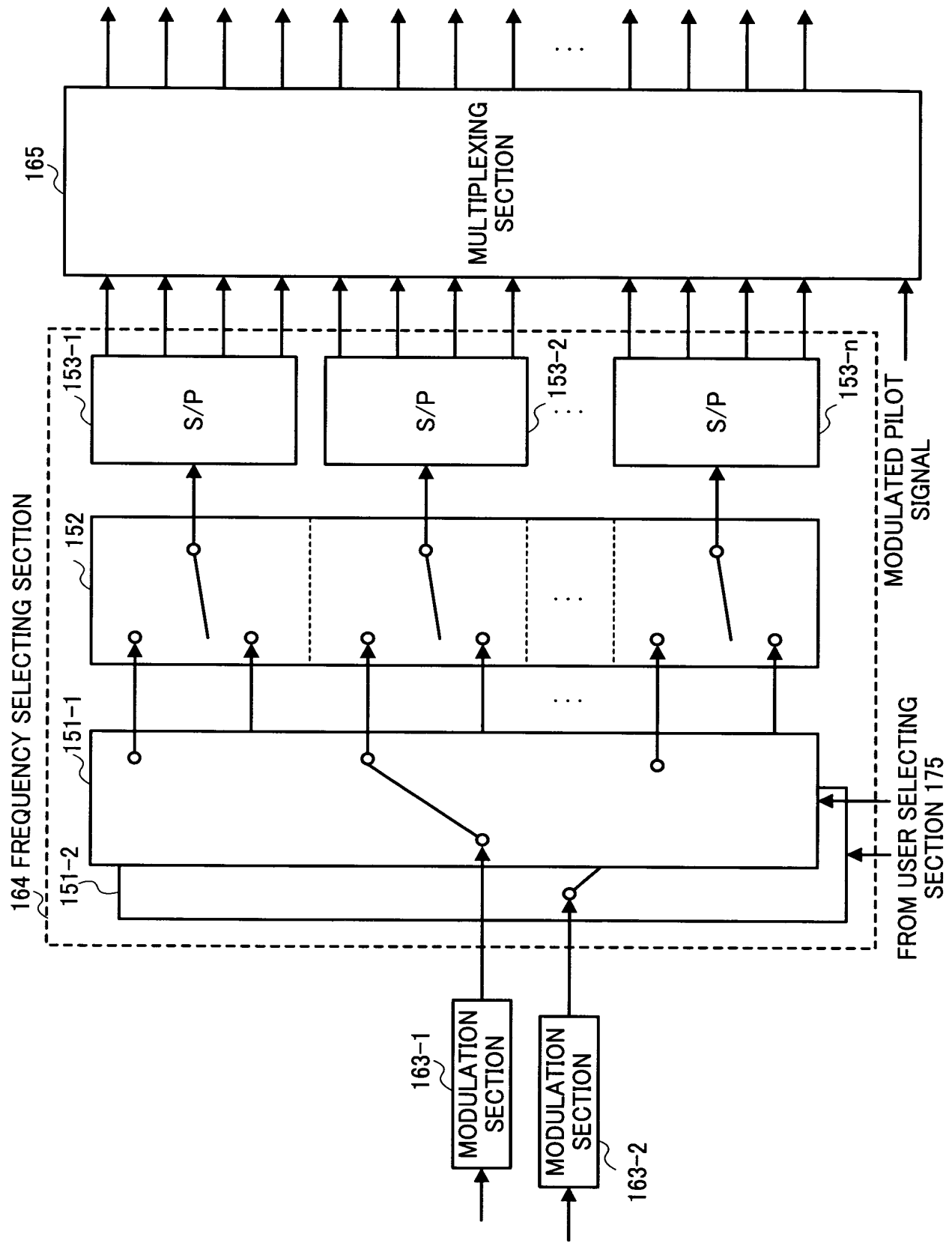


FIG.10

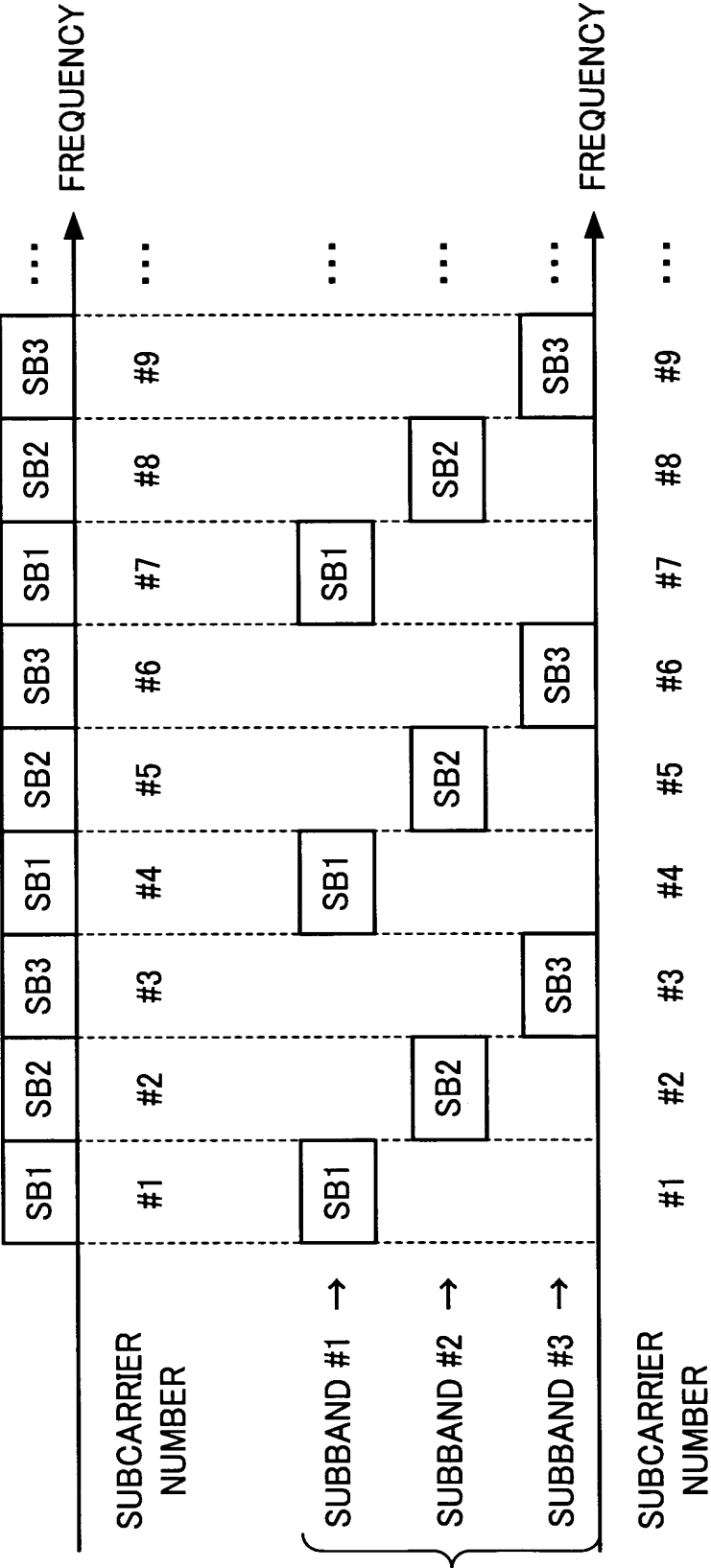


FIG.11

12/29

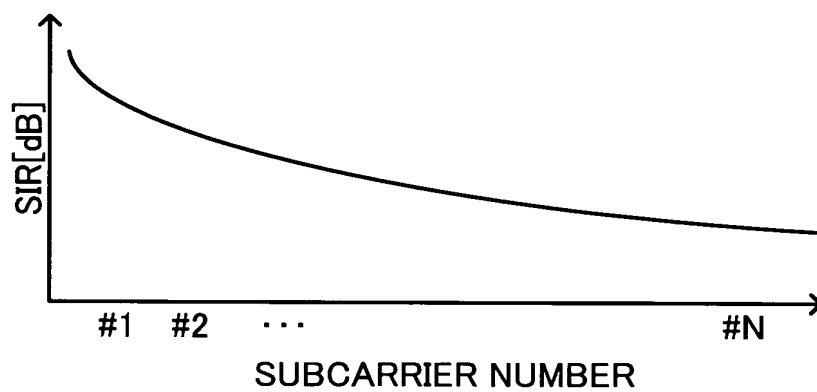
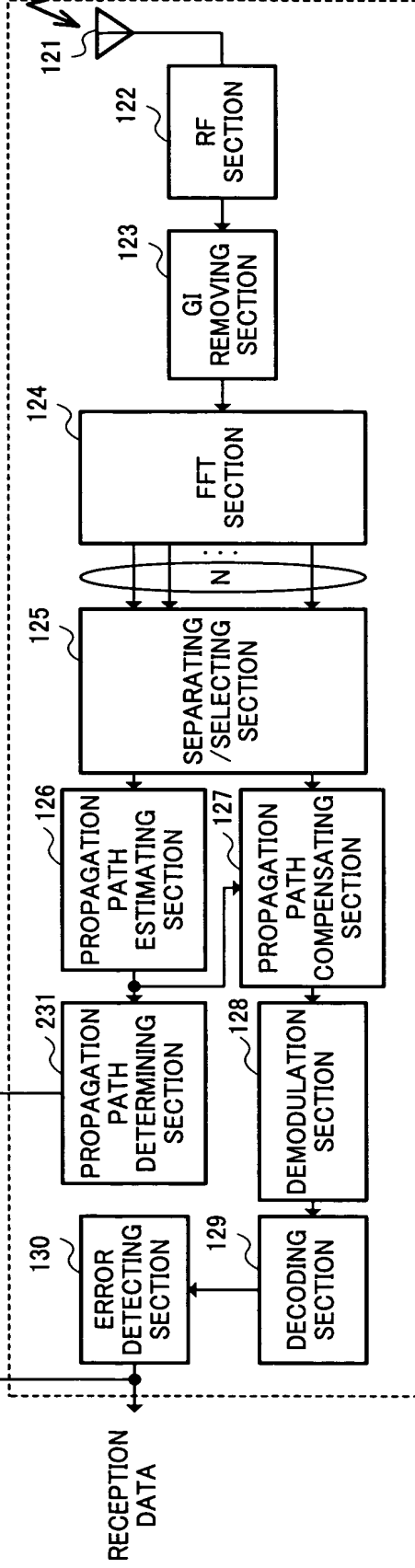
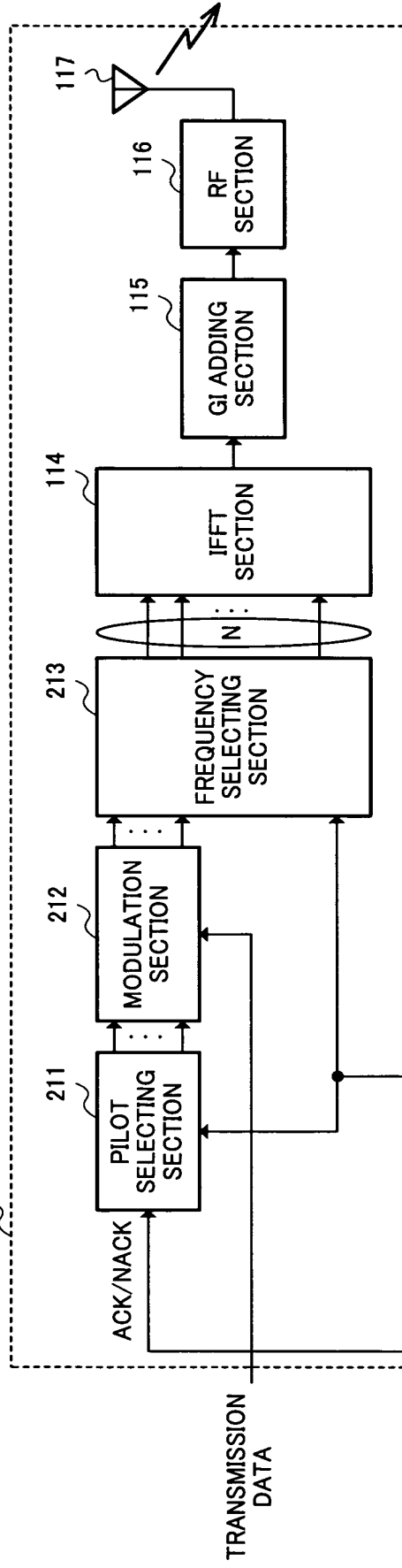


FIG.12

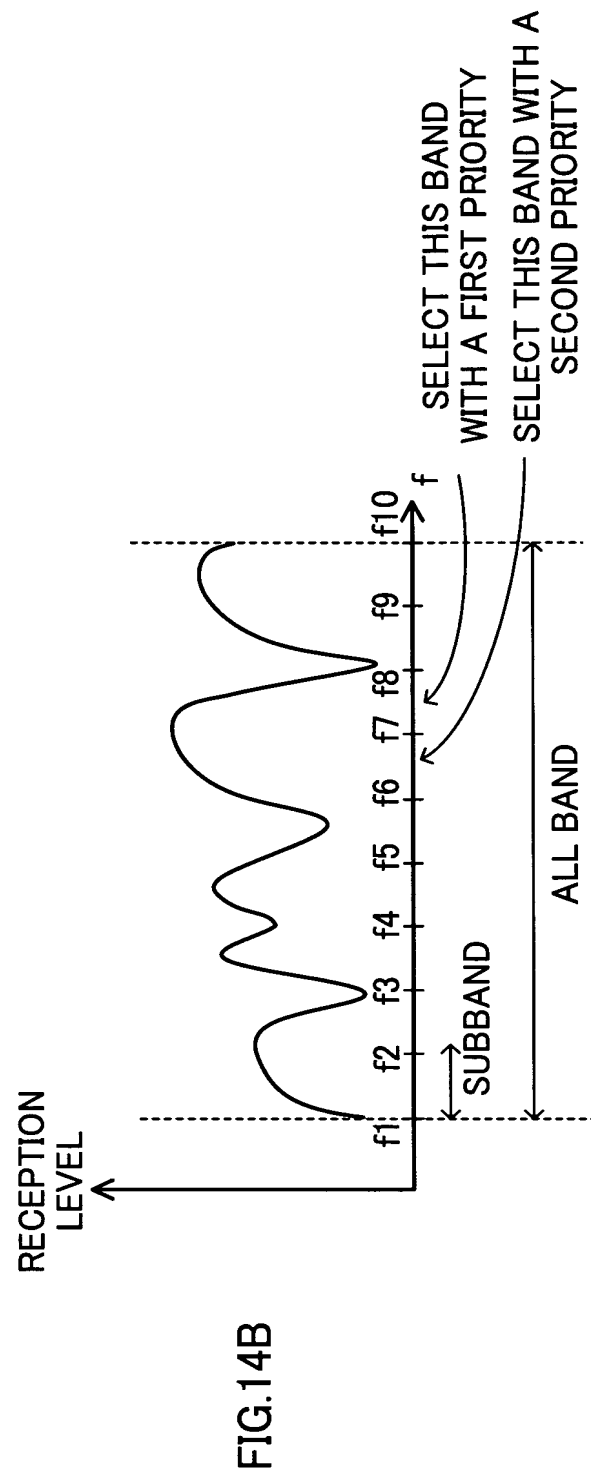
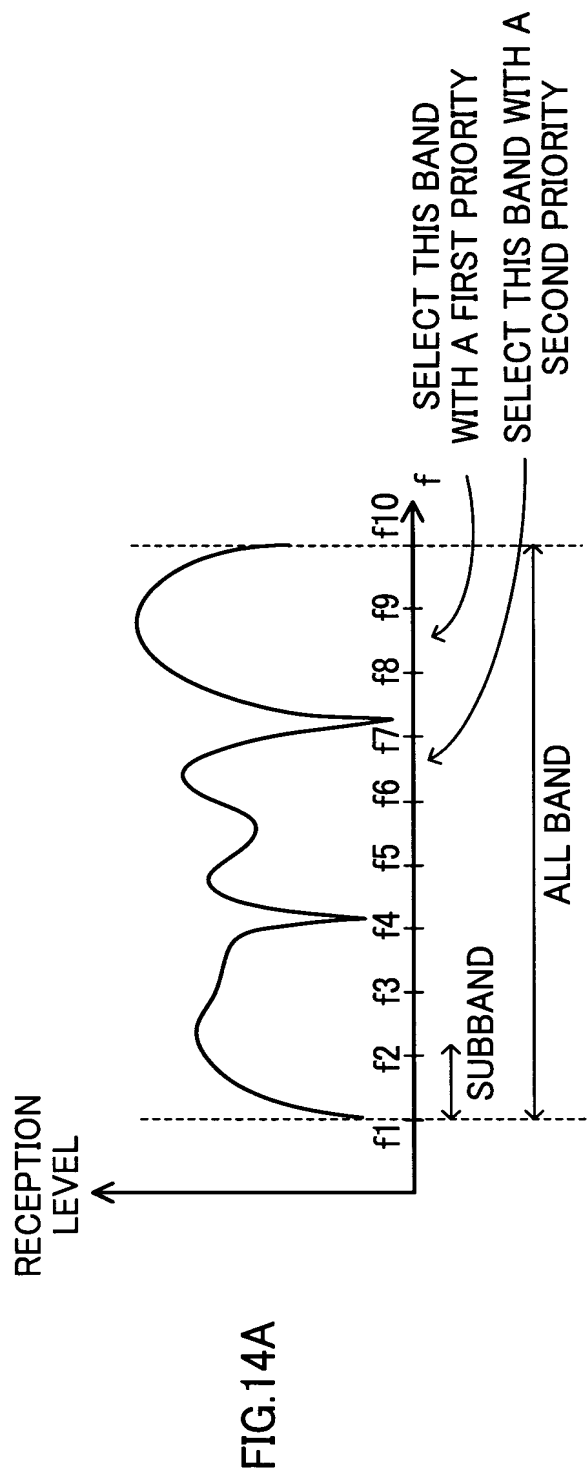
200 MOBILE STATION APPARATUS

210 TRANSMITTING SECTION



220 RECEIVING SECTION

FIG.13



	FIRST PRIORITY	SECOND PRIORITY
ACK	1, 1	1, -1
NACK	-1, 1	-1, -1

FIG.15

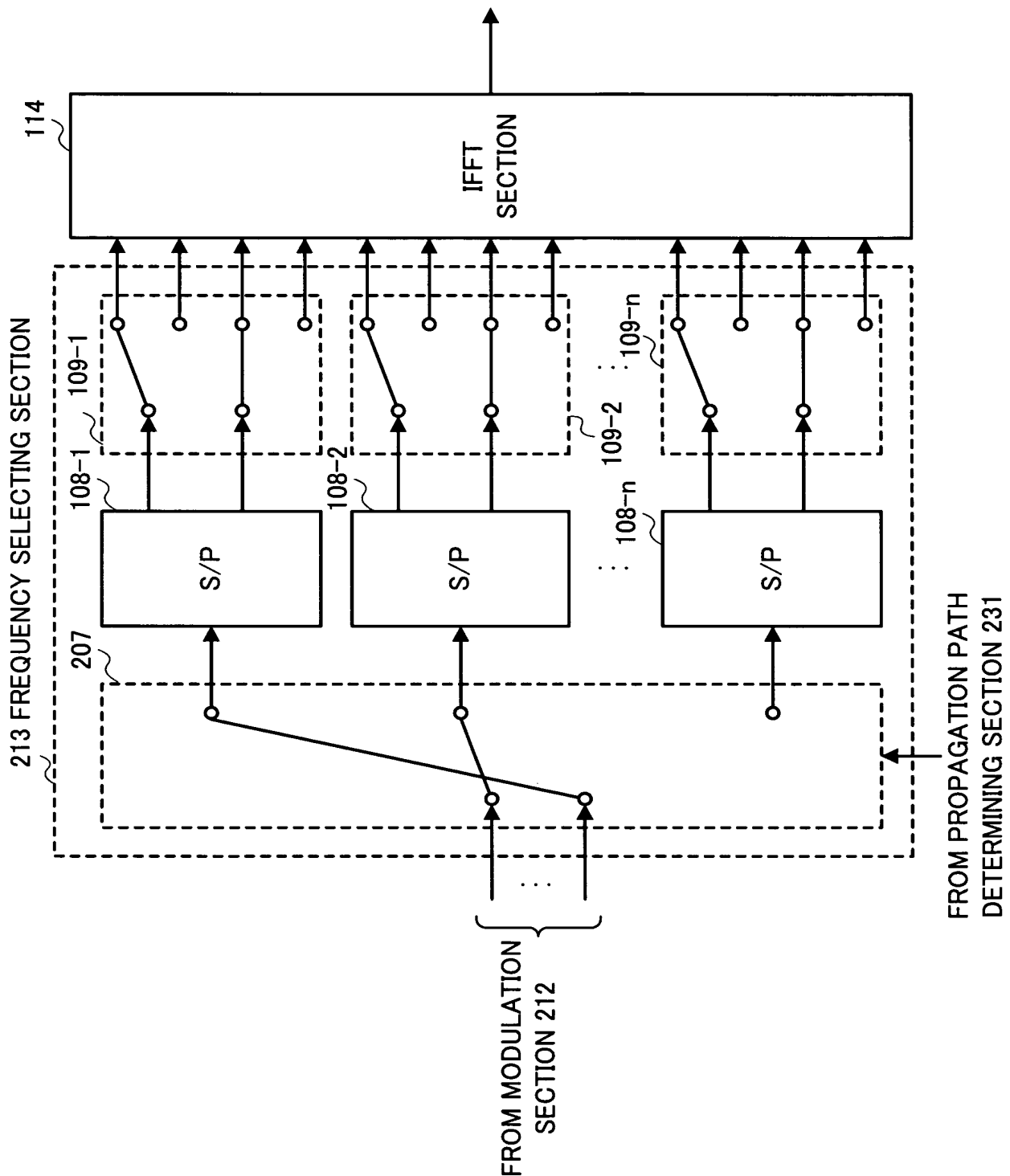


FIG.16

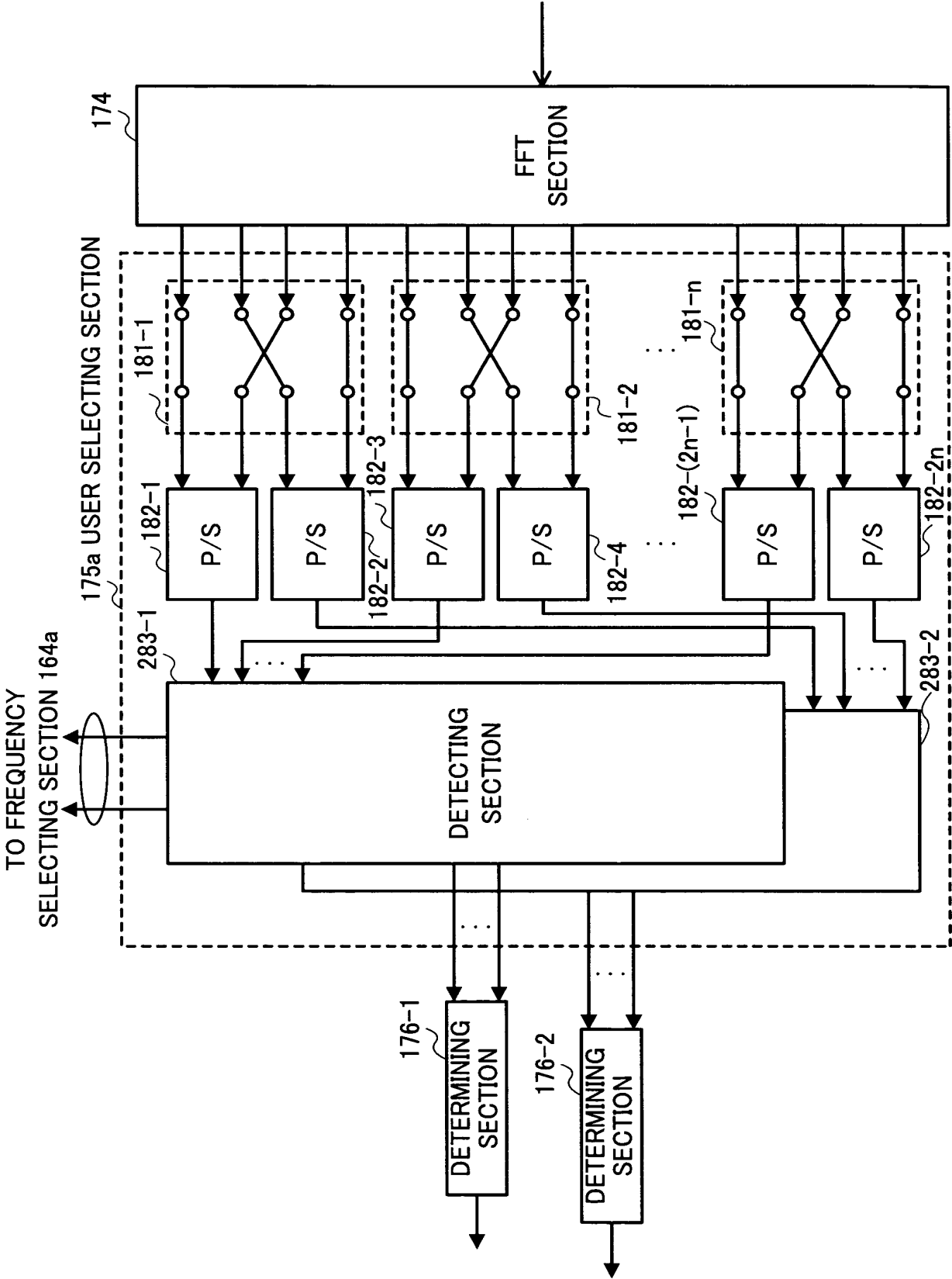


FIG.17

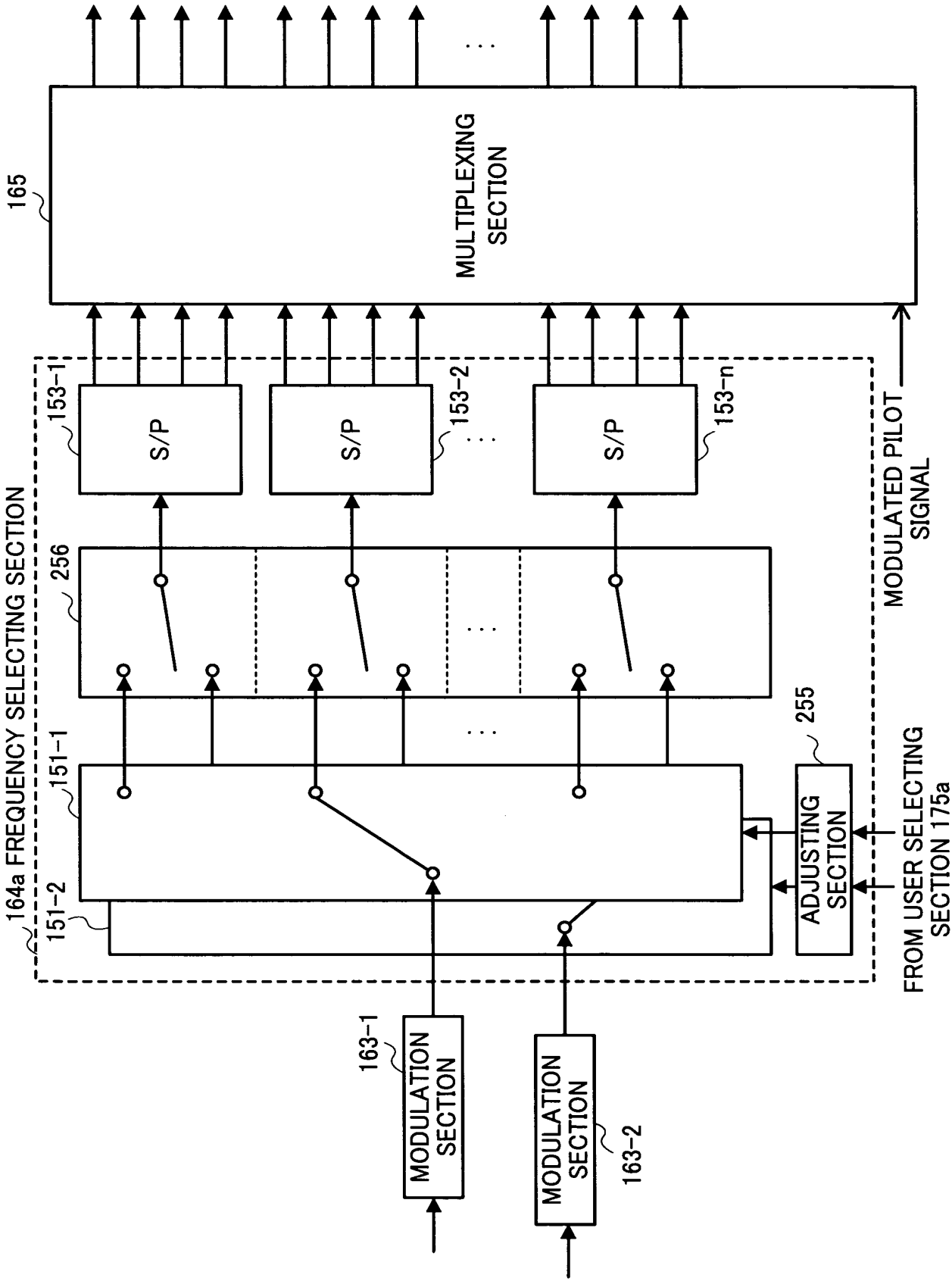


FIG.18

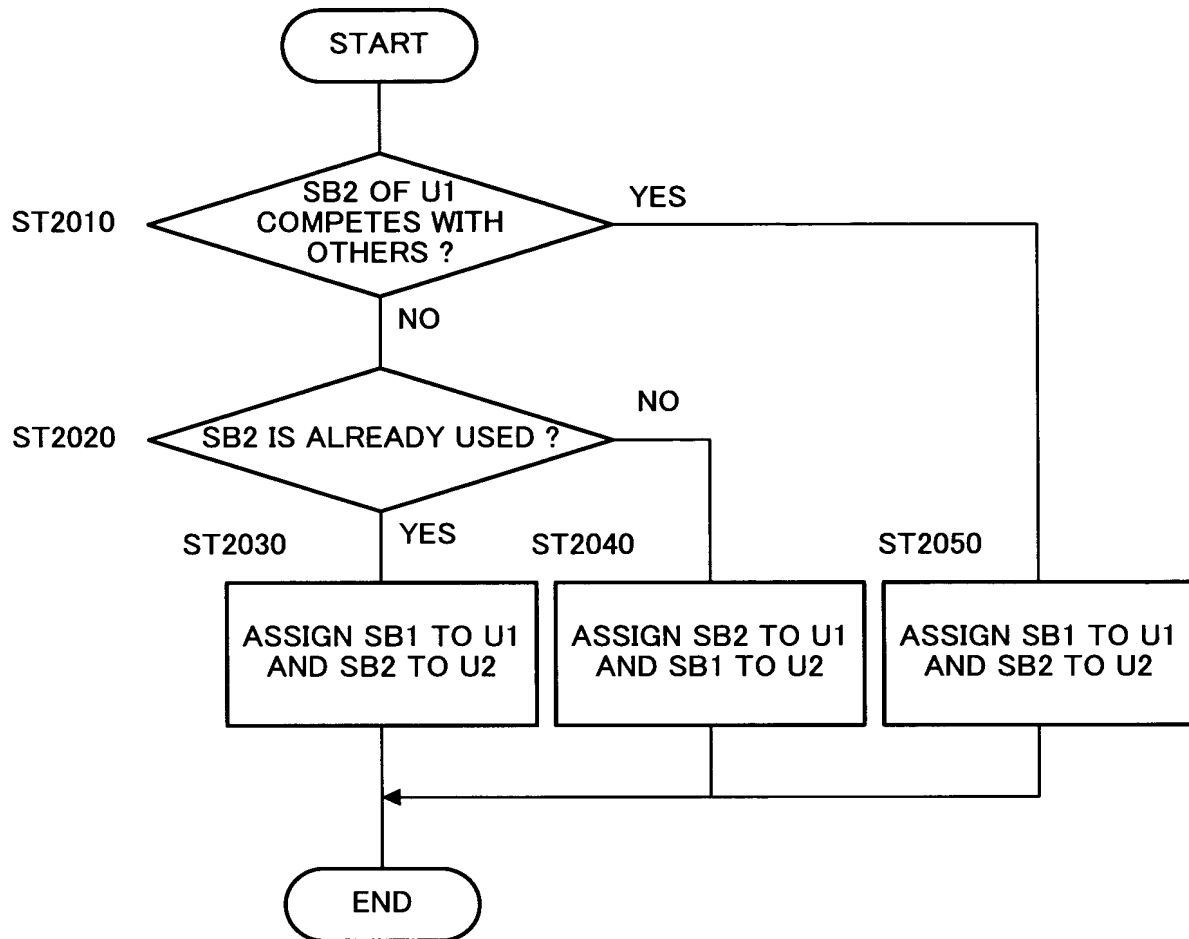


FIG.19

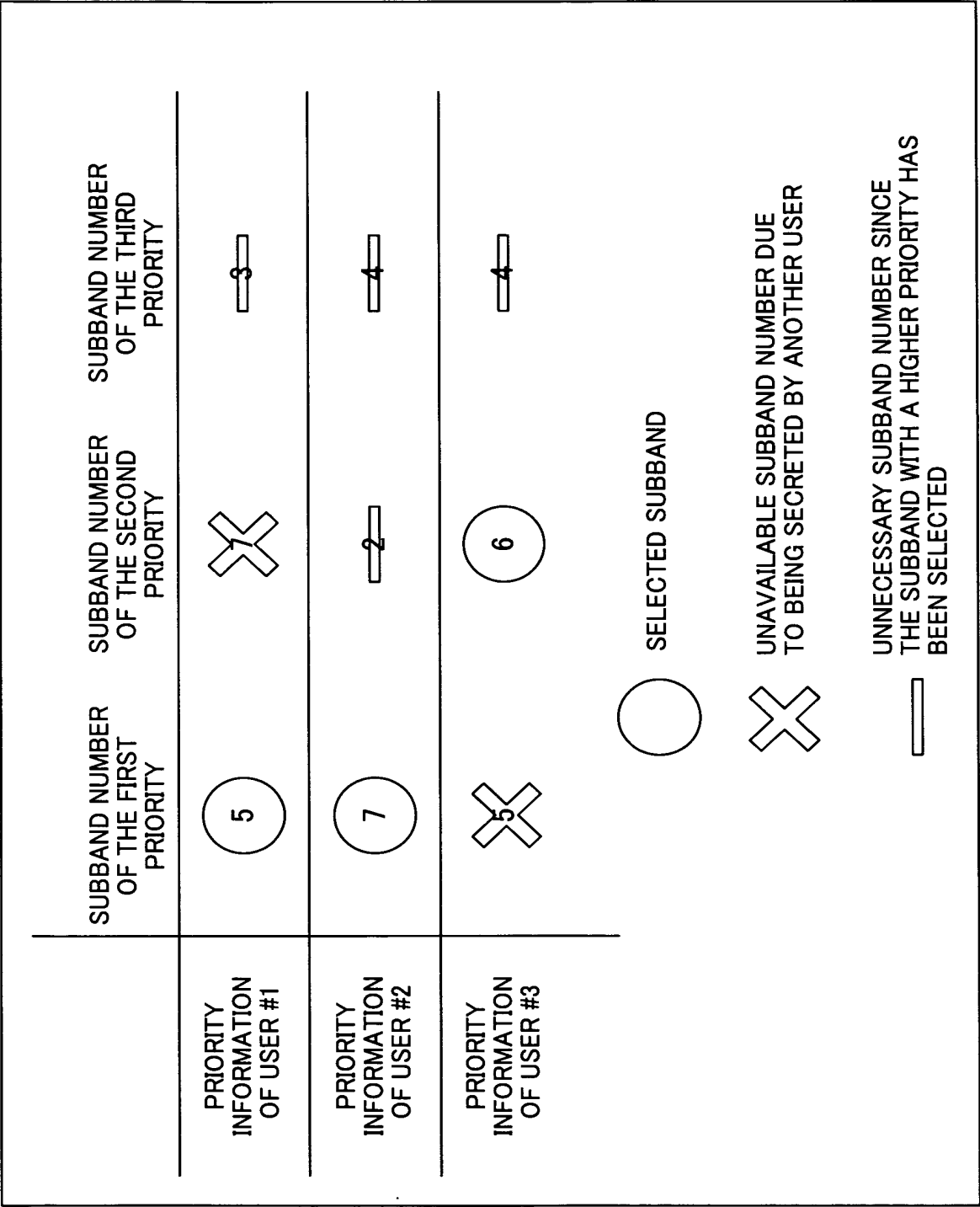


FIG.20

300 MOBILE STATION APPARATUS

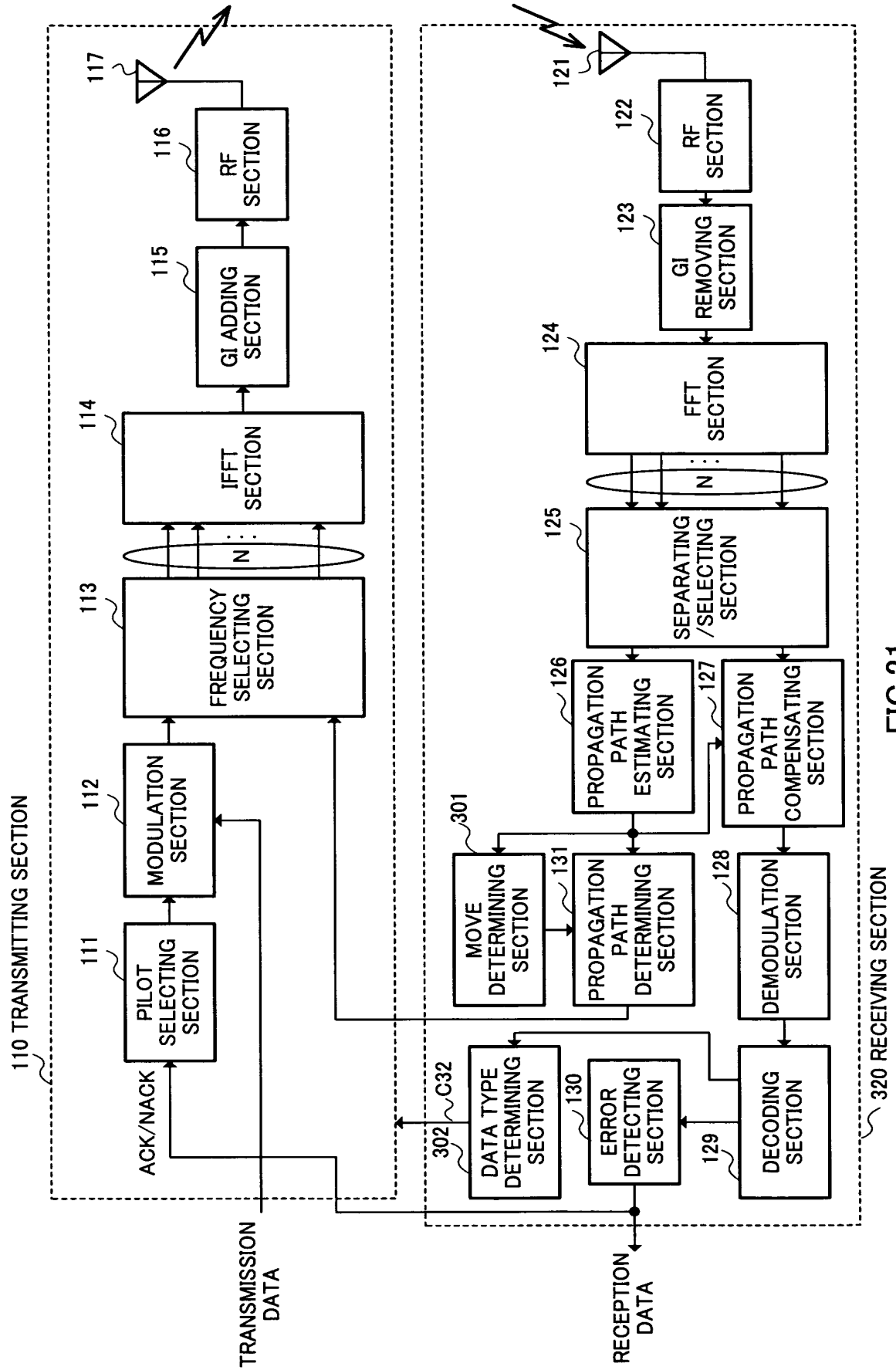


FIG.21

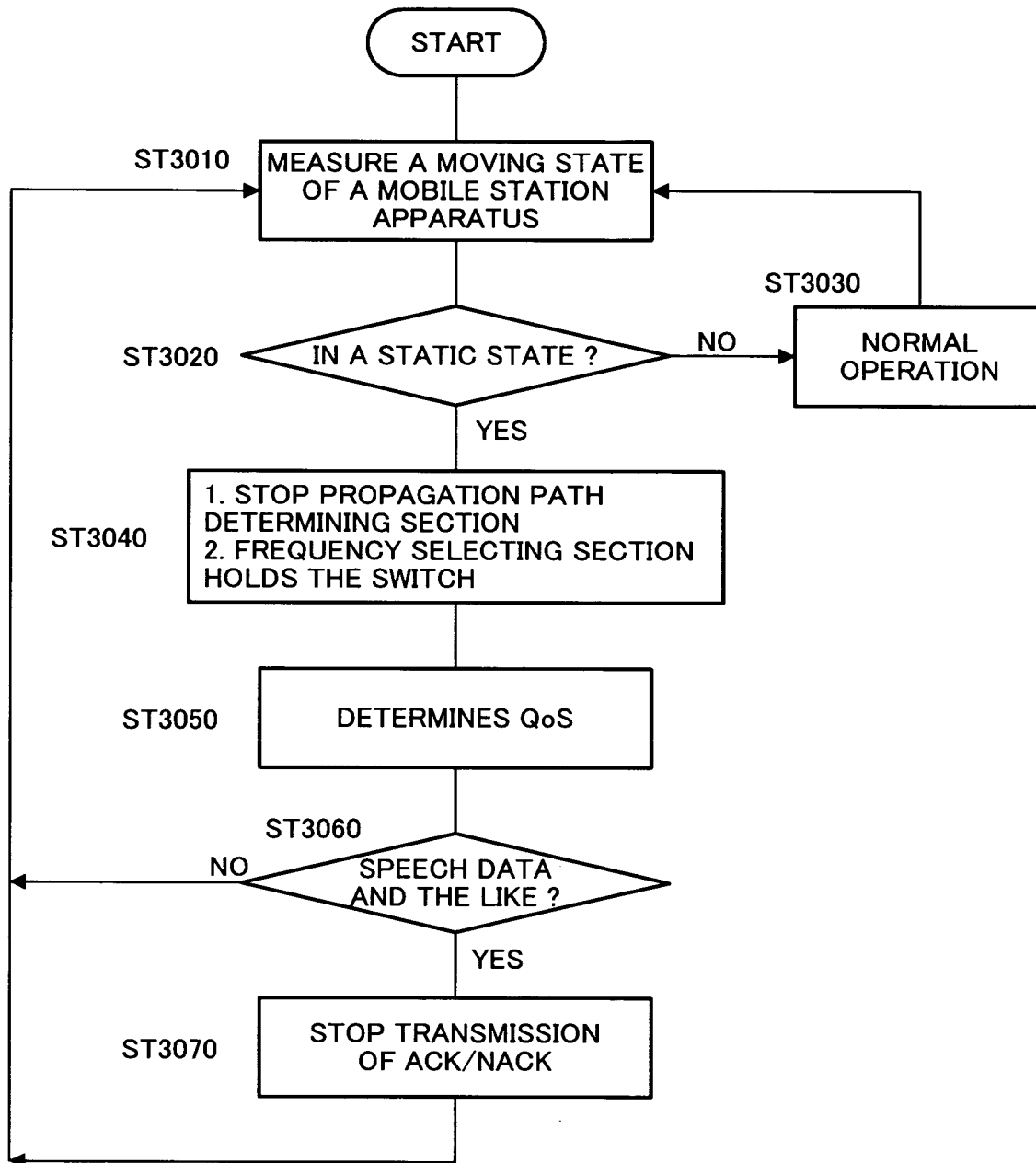


FIG.22

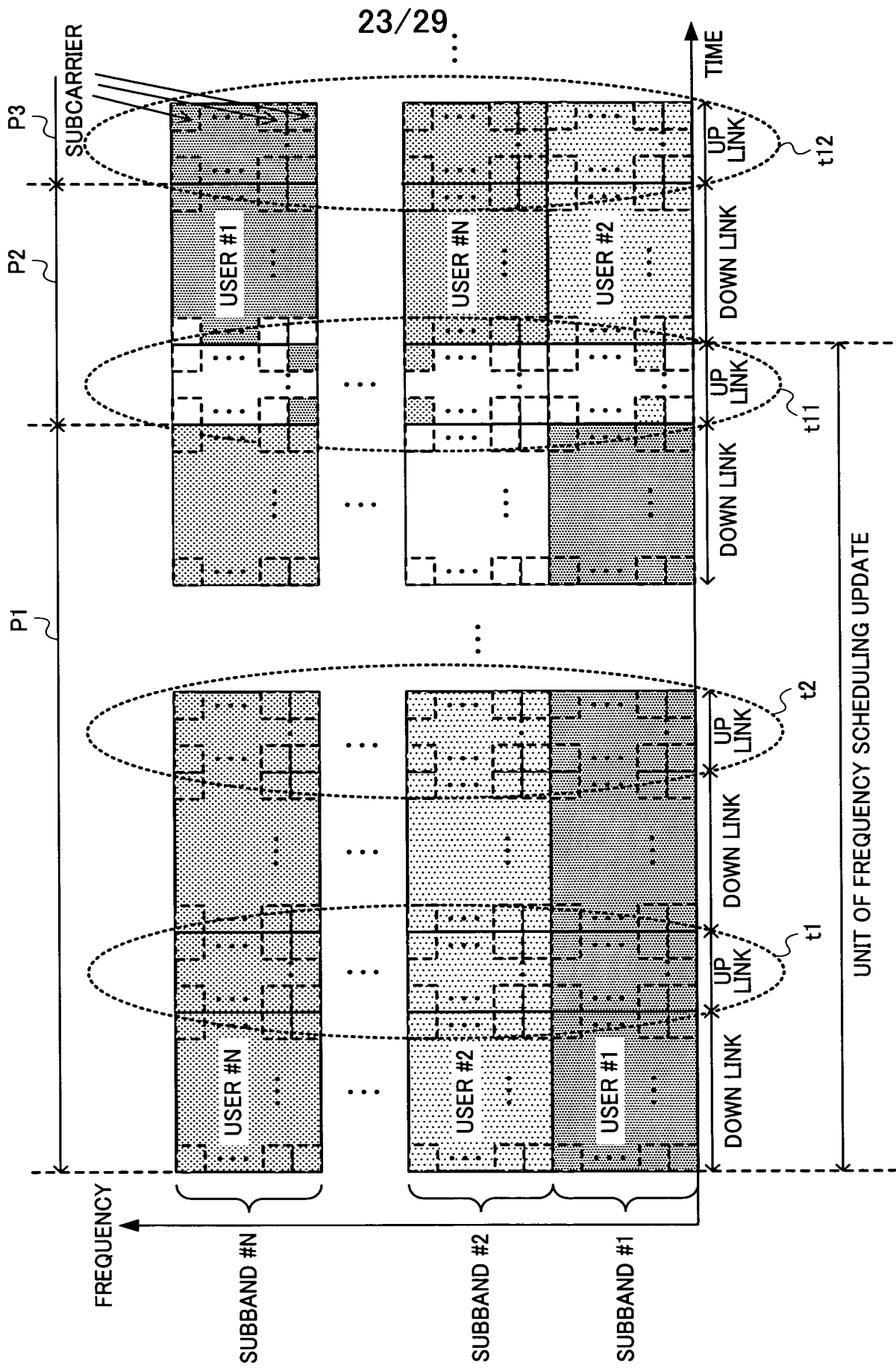


FIG.23

400 MOBILE STATION APPARATUS

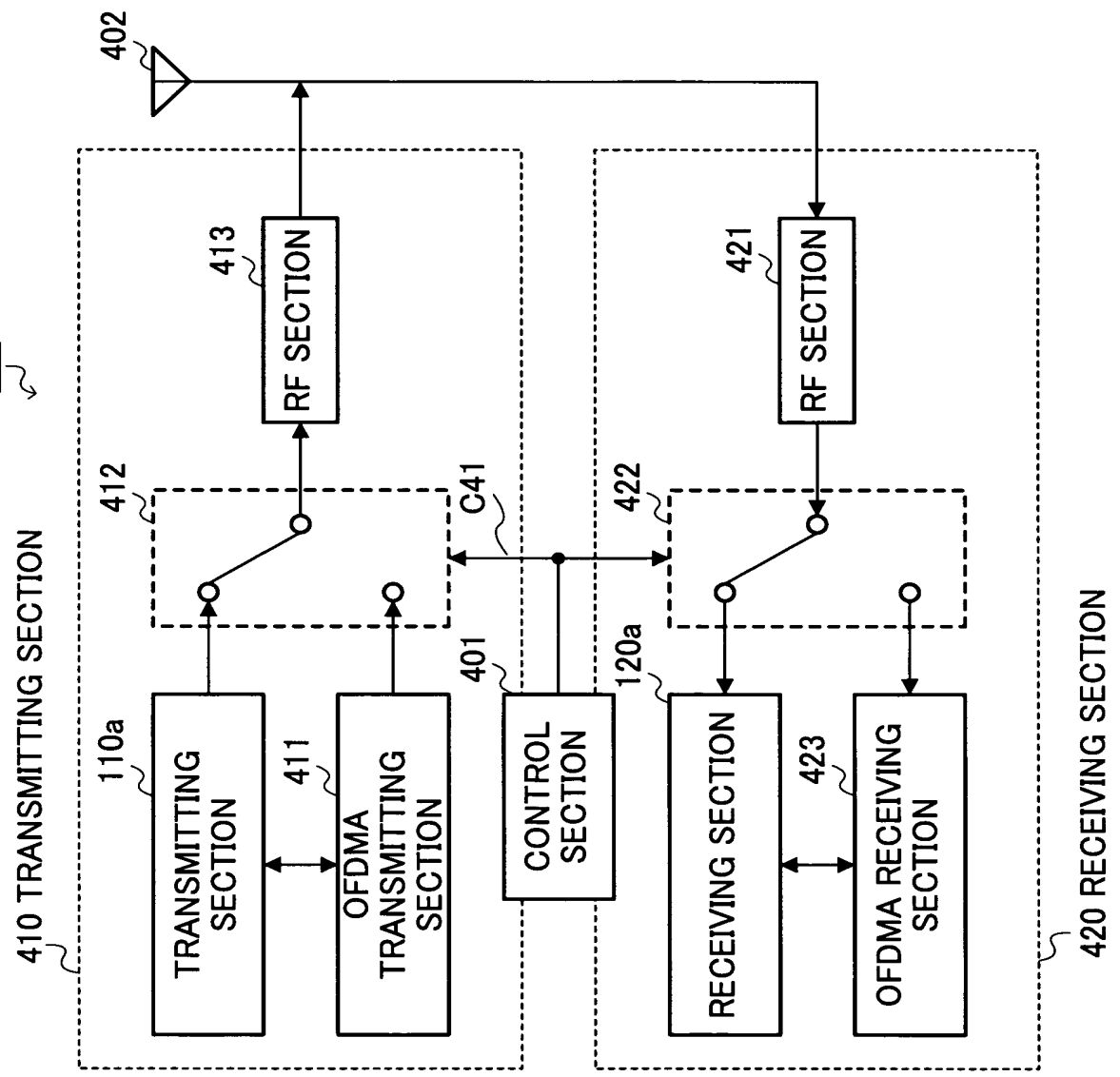
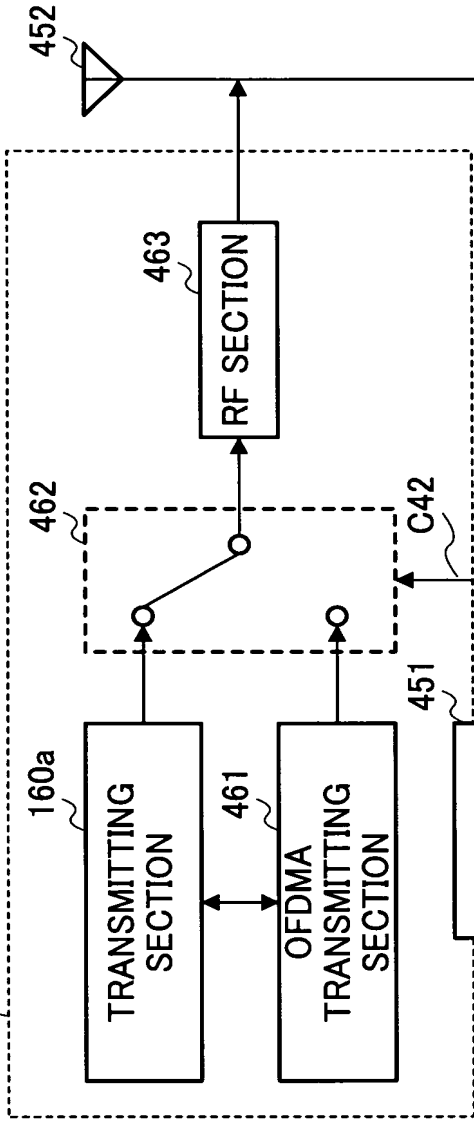


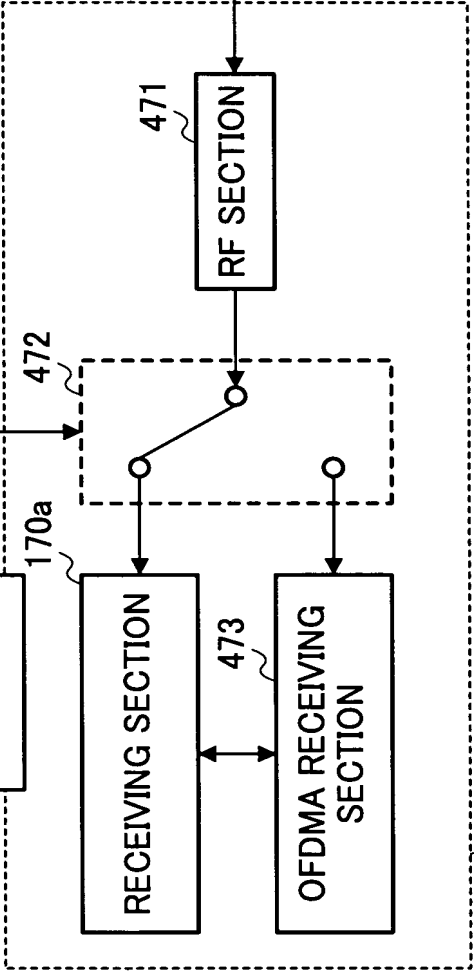
FIG.24

450 BASE STATION APPARATUS

460 TRANSMITTING SECTION



CONTROL SECTION



470 RECEIVING SECTION

FIG.25

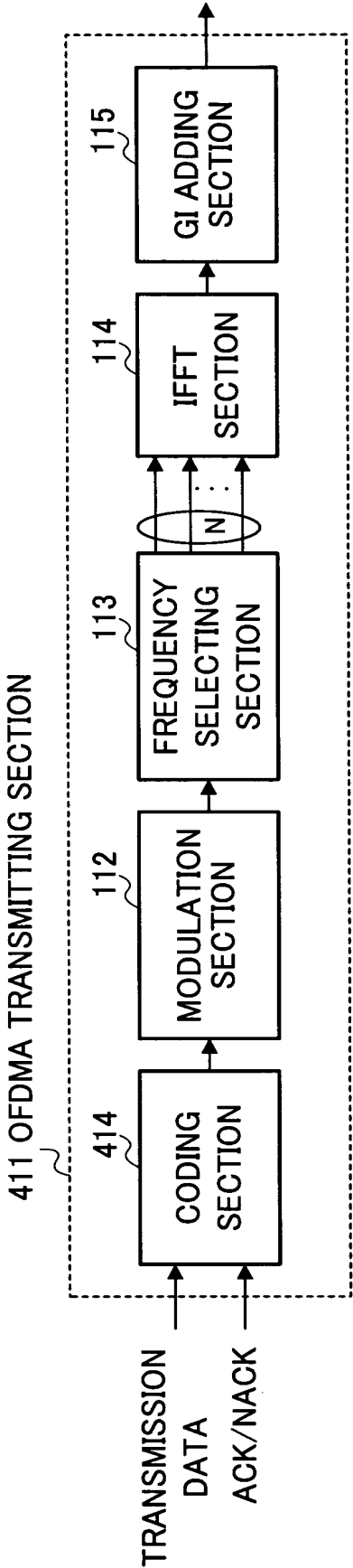


FIG.26

423 OFDMA RECEIVING SECTION

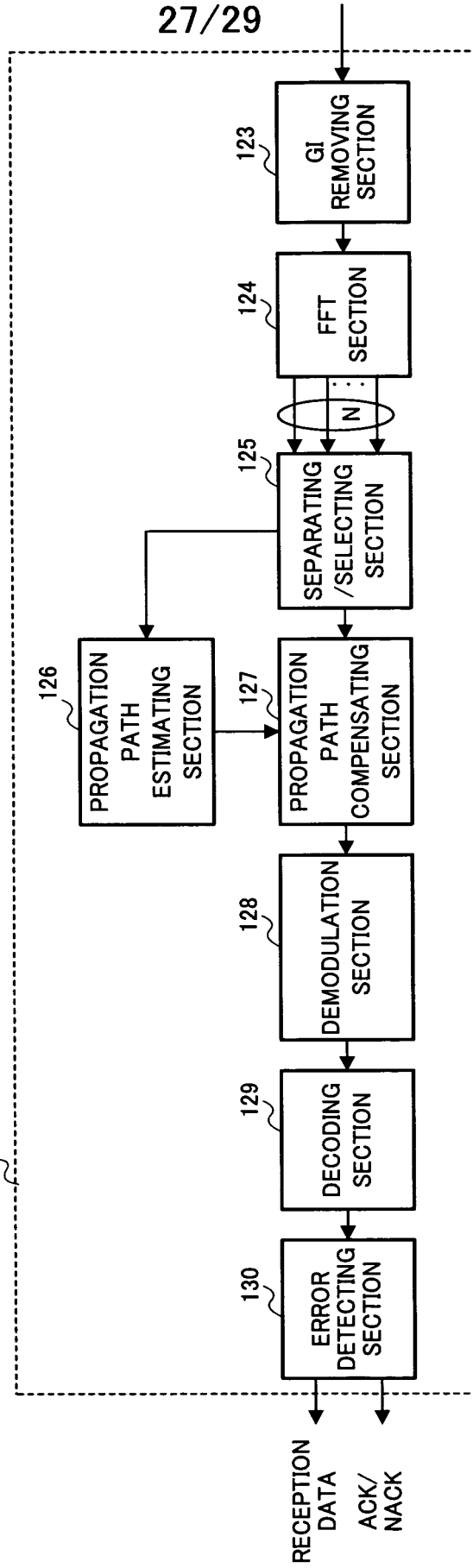


FIG.27

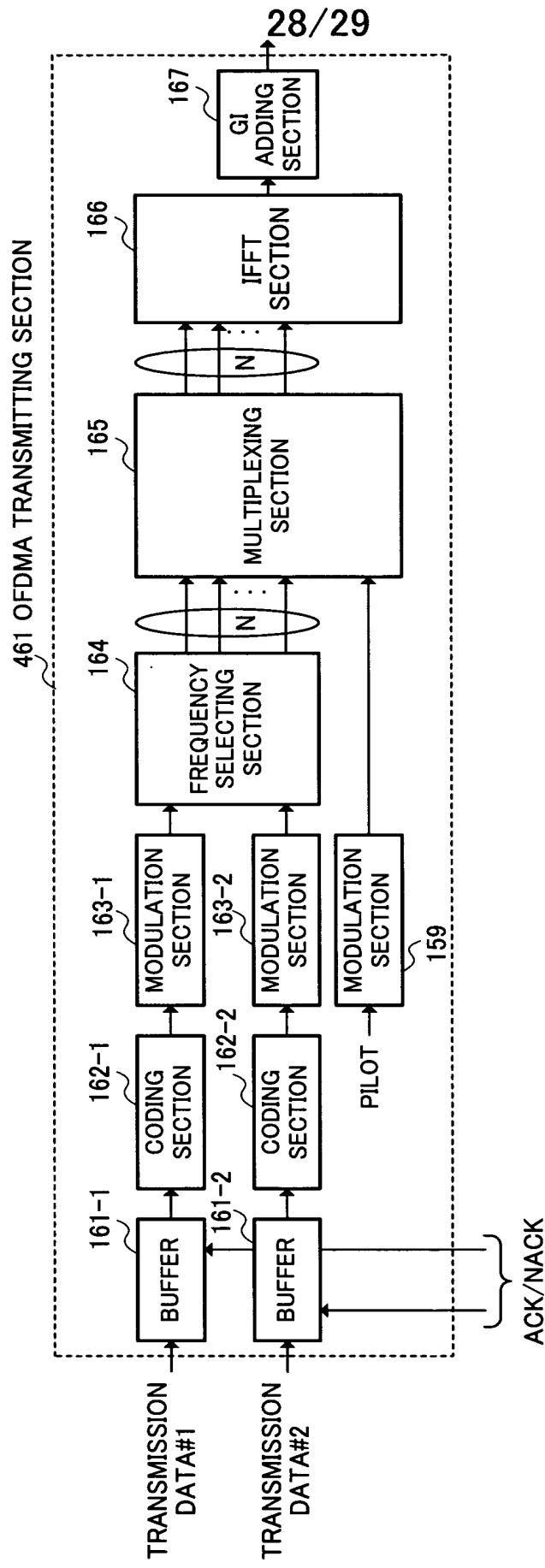


FIG.28

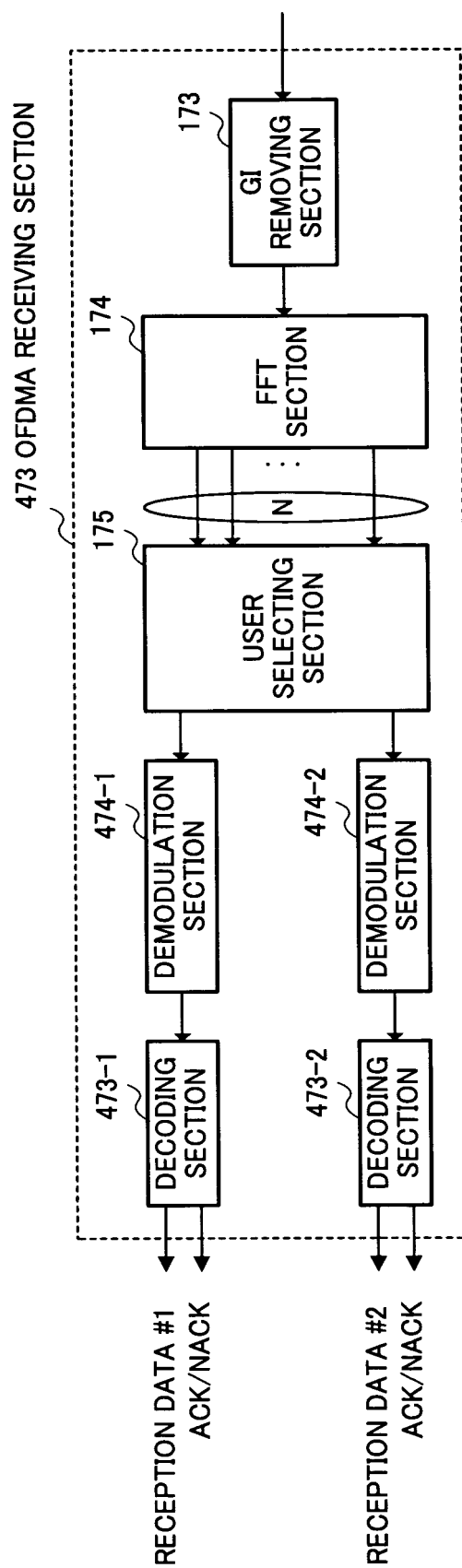


FIG.29